**Statistics 421/621 – Applied Time Series and Forecasting**
**Spring 2016**

**Lecture:** MW 1-2:15pm**,** Ryon Engineering Laboratory 201
**Problem Session:** TBA

**Instructor:** Dr. Kathy Ensor; x4687; ensor@rice.edu
**Office Hours:** Monday 2:30pm to 3:30 or by appointment

**TA:** Michael Weylandt; michael.weylandt@rice.edu
**Office Hours:** By appointment.

**Course Objective:** To educate students on the foundation and practical implementation of time series methods and forecasting. Examples will come primarily but not solely from a broad spectrum of financial problems.

**Textbook:** The main text for the course is:

- *The Analysis of Financial Times Series* by Ruey Tsay, 3rd Edition (Data sets; errata)
- *There is also a free text by Shumway and Stoffer, The easy version of Time Series Analysis and Its Applications http://www.stat.pitt.edu/stoffer/tsa3/tsa3EZ.pdf*
- *Another free text on simple time Forecasting: principles and practice by Rob J. Hyndman and George Athanasopoulos is found at https://www.otexts.org/fpp.*

**Computing Required:** This course will require a substantial amount of computing and data analysis, relying on the statistical software package R (https://www.r-project.org/). We will include useful resources for time series with R on the course owlspace site.

**Assessment:**

- 30% Midterm Exam – in class – target date February 24th (subject to change with sufficient lead time)
- 40% Final Exam – comprehensive exam scheduled by the Registrar
- 30% Quizzes, class participation, and homework.
- There will be additional exam and homework questions for STAT 621 students based on the assumption of graduate level background knowledge in statistics.

Graded HW's will be pledged assignments. HW may be assigned but not graded. When HW is not graded, HW assessment will come in the form of in class quizzes related to the homework. Challenge questions on homework and class material will be posted on Owlspace prior to each lecture. Class participation will be based on the number of challenge questions answered correctly.

**Attendance:** Although attendance is not formally required students will benefit from regular attendance. Further, there is an in class participation component to the grading. If you do miss class you are responsible for getting notes and assignments.

**Piazza:** Please direct questions to the course Piazza page (https://piazza.com/class/ij62ru1rc53qk) so that the instructor, TA, and other students can help answer questions and moderate discussions. Piazza contribution will be considered as part of course participation.

**Problem Sessions:** The TA will hold problem session(s) to review class material, review the use of R, and work through example problems. Please indicate preferred times at http://doodle.com/poll/7zd7enxigkest5tr. Attendance at the problem sessions is not required, but strongly encouraged.

**Disabilities:** I encourage any student with a disability that requires accommodation to let me know as well as Rice Disability Support Services.